



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

SE-5J

DEC 04 2015

Mr. Matthew Kennedy
AECOM
100 South Wacker, Suite 500
Chicago, Illinois 60606

Dr. Steve Kornder
AECOM
100 South Wacker, Suite 500
Chicago, Illinois 60606

RE: Draft Work Plan for Investigation and Removal of Radiologically-Contaminated Fill Soil,
510 North Peshtigo Court, Chicago, Illinois – AECOM Project No. 60442737

Dear Mr. Kennedy and Dr. Kornder:

In addition to comments described during our telephone call on October 29, 2015, with Dr. Kornder, regarding the Appendices, USEPA has comments below pertaining to the body of the work plan. We are also expecting terminology changes suggested to the body of the work plan be applied to the Appendices.

1. USEPA defines these terms --- Fill, Contaminated Fill, Clean Fill, Demolition or General Construction Debris, Soil, Subsoil, Topsoil and Native Materials, as follows:

Fill: man-made deposits of natural soils or rock products and waste materials (ASTM D653-14 Standard Terminology Relating to Soil, Rock, and Contained Fluids). Fill components may include a variety of identifiable materials including brick, cement, wood, wood ash, coal, coal ash, boiler ash, clunkers, other ash, asphalt, glass, plastic, metal, inert, demolition debris, and roadside ditch materials.

Contaminated Fill: fill exhibiting thorium contamination exceeding the Lindsay Light Thorium Action Level of 7.1 pCi/g for radium-228 plus radium-226.

Clean Fill: clean construction or demolition debris, also known as "clean fill", is defined as uncontaminated broken concrete without protruding metal bars, bricks, rock, stone, reclaimed asphalt pavement, or dirt or sand generated from construction or demolition

activities. (Source: <http://www.epa.illinois.gov/topics/waste-management/waste-disposal/household-hazardous-waste/disposal/index>)

Demolition or general construction debris: non-hazardous, uncontaminated materials resulting from the construction, remodeling, repair, and demolition of utilities, structures, and roads, limited to the following: soil, wall coverings, reclaimed asphalt pavement, rock, plaster, glass, non-hazardous painted wood, drywall, plastics, non-hazardous treated wood, plumbing fixtures, electrical wiring, non-hazardous coated wood, non-asbestos insulation, bricks, wood products, roofing shingles, concrete, and general roof coverings. (Source: <http://www.epa.illinois.gov/topics/waste-management/waste-disposal/household-hazardous-waste/disposal/index>)

Soil (earth): sediments or other unconsolidated accumulations of solid particles produced by the physical and chemical disintegration of rocks, and which may or may not contain organic matter. (ASTM D653-14 Standard Terminology Relating to Soil, Rock, and Contained Fluids)

Subsoil: 1) soil below a subgrade of fill; or 2) that part of a soil profile occurring below the “A” horizon. (ASTM D653-14 Standard Terminology Relating to Soil, Rock, and Contained Fluids)

Topsoil: as used for landscaping purposes, usually the original surface layer of grassland or cultivated land. It does not generally include soil from peat lands or other special areas, such as land disturbed by industrial activity. Topsoil is usually a darker shade of brown, grey, or red than the subsoil that lies immediately beneath it, because it contains organic matter intimately mixed with the mineral matter. Topsoil tends to be more friable and pervious than inorganic soils. (ASTM Standard D5268-13 Standard Specification for Topsoil Used for Landscaping Purposes)

Native materials: soil, sand, or rocks that were present prior to the application of fill.

2. We noticed the term – “Historical Fill” is used throughout this work plan. Please define.
3. Page 1, **1.0 Introduction**, please state that there will not be a QAAP since this is a non-complex removal.
4. Page 3, **2.1 Site Location**, second paragraph, please rewrite as follows: The radiologically-contaminated materials were originally generated as waste by the former Lindsay Light thorium gas mantle production facilities which used and produced thorium nitrate in its manufacturing process. During construction and utility activities, thorium contaminated materials have been identified in fill materials throughout Streeterville. The Lindsay Light manufacturing operations were located at 22 West Hubbard Street, 161 East Grand Avenue, and 316 East Illinois Street in Chicago, Illinois. These

manufacturing operations were conducted from the early 1900s through the early 1930s. The thorium contamination typically consists of elevated concentrations of thorium and associated decay products in the fill soils near the former Lindsay Light facilities. In addition, asbestos containing lantern mantle string ties have also been identified in fill materials. USEPA has directed the investigation and cleanup of radiologically-contaminated fill soil at a number of Streeterville properties. Due to the presence of thorium contamination at the parcels adjacent to and in the same block as the subject project and documented thorium cleanups at other properties in the Streeterville area, screening for thorium-contaminated fill soil is warranted where excavation work is planned. Furthermore, the USEPA, which has oversight authority for radiologically-contaminated CERCLA sites, requests that radiological surveys be completed prior to and during site development within the area designated and commonly referred to as the Streeterville Thorium Investigation Area.

5. Page 4, **2.3 Site Lithology and Groundwater Conditions**, insert the "Section" before 2.6.
6. Page 6, **2.5 Building Demolition**, please rewrite as follows: In late 2003, a former owner and developer of the property demolished the aboveground portions of the former Kraft building. The subsurface portions of the basement (i.e., walls and floor) were left in-place. The basement floor slab was broken up, but left in-place, to prevent water from being retained within the former foundation. The inorganic demolition debris (i.e., concrete, brick, etc.) from the building was used to fill the basement foundation. The demolition debris was covered with a gravel base course, graded and surfaced with asphalt to allow utilization of the area as a parking lot.

The demolition debris utilized for fill within the former foundation did not contain fill material derived from other portions of the property or adjacent sites that could potentially contain radiologically-contaminated material. Thus, it is not necessary to conduct radiological screening of the debris within the former foundation during excavation activities. However, since the former Kraft building was built in 1937, it has not been confirmed conclusively whether fill, which may be radiologically-contaminated, is present beneath the basement floor. Although, the basement floor survey (URS, July 2003) indicated no evidence of radiological-contamination, the basement floor could have shielded gamma emissions. Therefore, it is anticipated that visual verification of the absence of fill material (and radiological surveying if fill material is present) beneath the basement foundation will be necessary during removal of the former basement slab/foundation. When AECOM pursues visual verification then AECOM shall immediately contact USEPA so USEPA can also conduct visual verification.

7. Page 9, **3.1 Scenario 1 – Construction Excavation Screening Only**, please rewrite the first two sentences as follows: Scenario 1 includes gamma screening during construction

excavation activities that require the removal or excavation of fill. Screening of demolition debris contained within the foundation of the former Kraft facility, however, is not required as described in Section 3.3.5 below.

8. Page 9, **3.2 Scenario 2 – 100% Excavation and Screening of Site**, please rewrite as follows: Scenario 2 will include excavation and the anticipated screening of 100% of the Site fill soil material down to the depth of native soils. Screening of demolition debris contained within the foundation of the former Kraft facility, however, it is not required as described in Section 3.3.5 below. Based on previous drilling investigations, native soils are encountered between 10 and 15 feet bgs. To perform this work safely and without the use of sheeting, portions of the sidewalks on the north and east edges of the site (approximately 12 foot wide) will be removed to allow for the walls of the site excavation to be sloped at approximately 1:1 ratio until native soils are encountered. All fill soil removed from underneath the sidewalks will be included in the radiation screening. If radiologically contaminated fill is discovered during screening, it will be remediated as described in the Methods Section 4.0 below.
9. Page 9, **3.3.1 Site Excavation and/or grading**, please rewrite as follows: Portions of the Site will be excavated and/or graded periodically during the construction activities. It is important to note that gamma screening applies to fill soil and that screening of native soils will not be performed. Additionally, once a walk-over gamma survey is performed of a specific area, that area will not be surveyed again until an additional depth of 18-inches is excavated. Gamma walk-over surveying should be performed until native materials are encountered and, assumptions as to the depth to native materials should not be made.

Site excavation or grading screening will involve the surveying for radiologically-contaminated fill that, because of fill thickness, may have shielded the presence of a radiologically-contaminated soil during previous walk-over surveys. Walk-over surveys will be performed as excavation proceeds in the areas where the fill is in excess of 18-inches thick in accordance with Section 5.7 of SOP-210 (Appendix E), and until native materials are encountered. If identified, contaminated soil will be removed to clean limits. Grading/excavation will be limited to 18-inches or less between surveys.

Former building foundations or buildings with basements within the fill/soil may require gamma screening. If discovered during the grading/excavation process, the potential presence of radiologically-contaminated fill materials below the floor slab or basement floor and fill material within the basement will be investigated (this is not meant to include the demolition debris within the former Kraft building foundation since it was derived from demolition of the Kraft building in 2003). Excluding the former Kraft building foundation, fill material within the basement structures will be surveyed using methods similar to those used for the excavation process (i.e., investigation in maximum 18-inch lifts through the full thickness of the basement fill).

Basement floor slabs, including the former Kraft building, will be investigated via potholing to determine if fill soil is present below the floor slab. If these potholing activities do not indicate the presence of fill soil beneath the slab and removal of the slab is not required for construction, then USEPA will be consulted to confirm that it is not necessary to completely remove these slabs for soil monitoring purposes. For Scenario 2, if fill soils are documented below the floor slabs, the method of investigation will consist of the removal of the floor, AECOM will then conduct a walk-over survey. The discovery and subsequent investigation of such structures will be included within the closure report for the Site.

10. Page 11, **3.3.2 Utilities and Grade Beams**, please rewrite the last paragraph as follows:
If radiologically-contaminated materials are identified, contaminated soils within the Site property boundaries will be removed to clean limits. Areas containing contaminated soil above the 7.1 pCi/g action level will be remediated until they are below the 7.1 pCi/g action level, and remain designated as Exclusion Zones until the area is verified by USEPA. Work within a utility installation area designated as an Exclusion Zone will require appropriate personal protective equipment (PPE) and personal air monitoring as described in Section 5.4. Personnel entering Exclusion Zones must be 40-hour health and safety trained. All equipment and personnel that enter an Exclusion Zone will be frisked clean upon leaving the area.
11. Page 12, **3.3.4 Foundations**, please rewrite the last paragraph as follows: If radiologically-contaminated materials are identified, contaminated soils within the Site property boundaries will be removed to clean limits. Areas containing contaminated soil above the 7.1 pCi/g action level will be remediated until they are below the 7.1 pCi/g action level, and remain designated as Exclusion Zones until the area is verified by USEPA. Work within a utility installation area designated as an Exclusion Zone will require appropriate personal protective equipment (PPE) and personal air monitoring as described in Section 5.4. Personnel entering Exclusion Zones must be 40-hour health and safety trained. All equipment and personnel that enter an Exclusion Zone will be frisked clean upon leaving the area.
12. Page 12, **3.3.5 Former Kraft Basement Foundations**, please rewrite the first sentence in the first paragraph as follows: As described in Section 2.5, in late 2003, the above-ground portions of the former Kraft building were demolished.

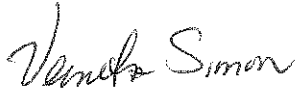
Page 13, **3.3.5 Former Kraft Basement Foundations**, please rewrite the last paragraph as follows: The basement floor survey (URS, July 2003) completed indicated no evidence of radiological contamination. However, the basement floor could have shielded gamma emissions. AECOM proposes that visual verification of the absence of fill material (and radiological surveying if historical fill material is present) beneath the basement foundation be conducted if removal of the former basement slab/foundation is necessary.

For fill below the floor, the method of investigation will consist of removal of the floor to gain access and subsequent performance of the walk-over survey if visual evidence of historical fill is present and the excavation can be entered safely. If the excavation cannot be entered safely, the spoil from the excavation will be screened as it is excavated and/or stockpiled adjacent to the excavation area. The results of this investigation will be included within the closure report for the Site. In addition, if AECOM pursues visual verification then AECOM shall immediately contact USEPA so USEPA can also conduct visual verification.

13. Page 14, **4.1 Cleanup Threshold**, please change the title of this section to **Removal Action Level**, and rewrite the last sentence in the second paragraph as follows:
Equipment calibration will be performed using the thorium calibration blocks from the former Tronox/Kerr-McGee West Chicago Rare Earth Facility or other USEPA-approved source.
14. Page 14, **4.2 Asbestos**, please rewrite the first paragraph as follows: In April 2014, at another Streeterville site, a sample was collected from a radiologically contaminated area that visibly contained numerous 3-5 inch strings. Lab results of the polarized light microscopy (PLM) indicated the strings were approximately 20-25% chrysotile, a common form of asbestos. The asbestos containing strings appear directly related to the mantles and were likely used to tie the mantles to a ceramic fitting that attached to the gas lamps. Based on the comments from the USEPA regarding analyses conducted, AECOM understands that the mantle strings themselves were apparently dipped/coated with thorium. Therefore, the use of field instrumentation to remove the thorium contaminated fill soil is expected to effectively remove the mantle related asbestos string ties. These asbestos strings have not been documented previously at the Site. However, if observed the string ties will require a slight modification to the plans and procedures historically utilized for thorium contaminated fill soils. The USEPA will be notified should screening activities reveal the presence of string ties.
15. Page 20, **4.6.2 Radiologically Contaminated Material**, please define the term “grossly contaminated,” with text narrative and a photograph.
16. Page 22, **4.10 Temporary Storage of Radiologically Contaminated Material**, please rewrite the first paragraph as follows: As per discussion with the USEPA, there may be a need for temporary on-site storage of radiologically-contaminated materials. Projects previously conducted in Streeterville have involved Tronox in the transportation and disposal of the radiologically-contaminated soil. If discovered, it is anticipated that radiologically-contaminated soil will be staged temporarily on-site in super-sacks until the remediation efforts are complete or sufficient volume has been staged for transportation. Stored soil will be property secured with fencing and placarded with appropriate warning signs (i.e., similar to that utilized for Exclusion Zones).

If you have questions or would like to discuss this matter further, please contact me at (312) 886-3601 or Eugene Jablonowski, Health Physicist, at (312) 886-4591. Please direct legal questions to Mary Fulghum, Associate Regional Counsel, at (312) 886-4683 or Cathleen Martwick, Associate Regional Counsel, at (312) 886-7166.

Sincerely,

A handwritten signature in cursive script that reads "Verneta Simon". The signature is written in dark ink and is positioned above the printed name.

Verneta Simon, P.E.
On-Scene Coordinator

bcc: Mary Fulghum, C-14J
Charles Gebien, SE-5J
Eugene Jablonowski, SE-5J
Debbie Keating, SE-5J
Cathleen Martwick, C-14J